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64. Tibor Kelen

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Polymer Science Pioneers

Tibor Kelen
1930–1993

Tibor Kelen was an outstanding scientist in Hungary, a leader in his field and indeed in the world. He was particularly prominent in polymer chemistry and contributed substantially to the understanding of polymer degradation and stabilization.

He was only 63, in the prime of life and at the height of his career, when – on his way home from work – a fatal automobile accident took him from our midst.

Born and bred in East Hungary, Tibor Kelen attended school in Nyiregyhaza, the winter residence of the family. His father was an agricultural engineer and leased an estate offering his three children a happy childhood with beautiful summer vacations in the country. All this, however, came to an abrupt end, when in March 1944 the Germans invaded Hungary and started the deportation of Jews. The entire family except for young Tibor was deported and perished in a concentration camp. Tibor, the only member of the family to survive returned home to Hungary where he slowly recovered and began to build a new life. He graduated from high school and then received his degree in chemistry, with honors, from the University of Szeged in 1953.

Tibor's career in chemistry began with industrial research in the field of silicate glass, the subject of his thesis for the Candidate of Science (PhD) degree which he obtained in 1967; when he accepted a job with TUNGSRAM Co., in 1953. In 1966 Kelen joined the Central Research Institute for Chemistry of the Hungarian Academy of Sciences, the Polymer Chemistry Department and began working on polymer degradation. In 1975 he was awarded the Doctor of Chemical Sciences (professor title). In 1985 he was appointed Full Professor of Chemistry and Head of the Department of Applied Chemistry at the Kossuth Lajos University of Debrecen.

Initially he investigated the kinetics and mechanism of the thermal and oxidative degradation and the stabilization of polymers. Later he became interested in the problems of polymerization and copolymerization. Together with Ferenc Tudos he determined the copolymerization parameters/reactivity ratios, a procedure that became known as the Kelen-Tudos equation, a method that is today widely applied for modern copolymerization techniques. The subject was first published in J. Macromol. Sci. Chem., **A9**, 1 (1975). For his achievement on radial polyreactions-polymerizations, copolymerization in polymer degradation, he received the Hungarian State/Kossuth/Prize, the highest Award in Arts and Sciences in Hungary.

Kelen's most recent investigations on ionic polymerization were done in cooperation with Joseph P. Kennedy. He was one of the discoverers of "quasi-living" cationic polymerization and contributed to the living character of cationic polymerization. The results of his investigations have been published in 180 paper in various international scientific journals and 74 in Hungarian journals. In 1983 Kelen wrote a monograph entitled "Polymer Degradation"; he also carried out a wide range of applied research which resulted in several patents.

Tibor Kelen initiated and actively participated in successful international projects of scientific cooperation, was a member of and officiated as Secretary of the Committee on Macromolecular Science of the Hungarian Academy of Sciences for several years and was President of the Working Committee of the Hungarian Academy of Science in Debrecen. As an invited and plenary lecturer he participated in a number of international meetings and acted as the secretary of the IUPAC International Symposium on Macromolecular Chemistry in Budapest in 1969. He was also the Chairman of the 10th International Symposium on Cationic Polymerization which was held in Balatonfured, Hungary in 1991.

As scientist and lecturer, Kelen was also highly acknowledged abroad: he was Visiting Professor at the University of Akron from 1980-82 and the University of Darmstadt, Darmstadt, Germany in 1992. He served on the Editorial Board of the "Polymer Bulletin", the "Angewandte Mukromolekulare Chemie" and the "Journal of Macromolecular Science – Pure and Applied Chemistry".

His two sons from his first marriage are married and both are gifted with their father's talent for mathematics. They are active and hold high positions in the field of computer sciences. Tibor Kelen was a real father to his adopted children of his second marriage and a proud grandfather boasting of five grandchildren.

Tibor Kelen was a soft-spoken gentleman, a man of few words, blessed with a brilliant mathematical mind and good organizational skills; a person, whose main hobby was his profession. He also enjoyed the simple pleasure of life: attending concerts, visiting museums or going to the movies - and was fond of travelling and driving cars.

His sudden death at the height of his creative years represents a profound loss to both international and national scientific life. Deeply affected by the loss of Tibor Kelen are his family and his colleagues in Debrecen and the University of Debrecen, where he developed the Department of Applied Chemistry into an internationally recognized and renowned research center.

An article submitted by Ferenc Tudos, Budapest, Hungary and Otto Vogl, Brooklyn, New York, USA.